

## Package : HRP

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### 1. Structure

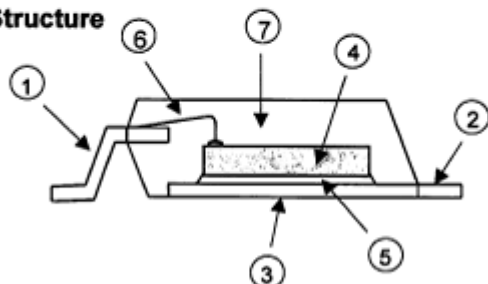


Fig. 1 Structure

No.	Compositional element
①	Lead (External lead : Pb free solder plating)
②	Heatsink (External lead : Pb free solder plating)
③	Die Pad
④	Die
⑤	Die Attach
⑥	Bonding Wire
⑦	Molding Resin

### 2. Tape and Reel information

#### 2. 1. Packing specification

Tape	Embossed carrier tape
Quantity	See the table on page 4/4
Direction of feed	TR (See Fig. 2)

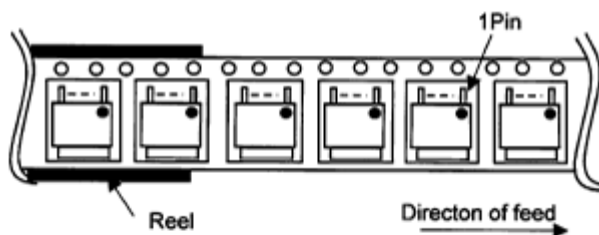


Fig. 2 Typical Tape and Reel configuration

#### 2. 2. Tape and Reel specification

##### 2. 2. 1. Tape and reel dimensions ( See the table on page 4/4 )

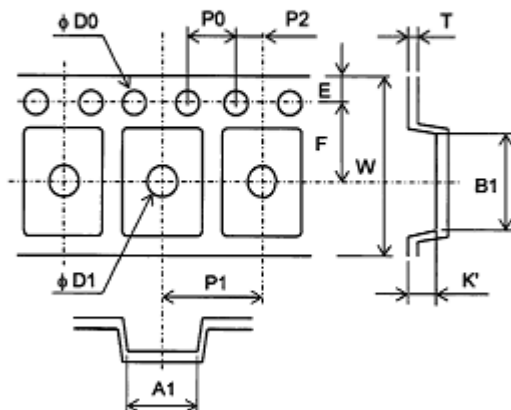


Fig. 3 Tape dimensions

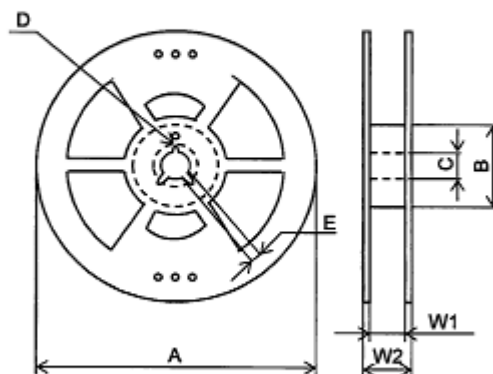


Fig. 4 Reel dimensions

## 2. 3. Leader and Trailer

## 2. 3. 1. Leader

No component pockets are 40 pockets or more.

## 2. 3. 2. Trailer

No component pockets are 10 pockets or more.

Tape is free from reel.

## 2. 4. Label for Reel and Box

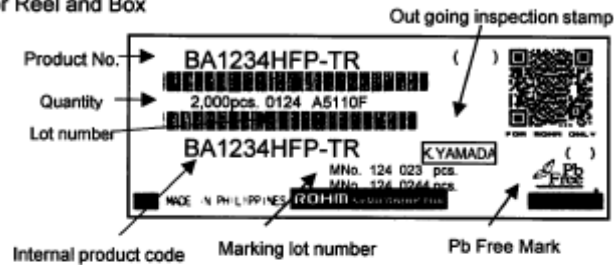


Fig. 5 Label example

## 2. 5. Packing style

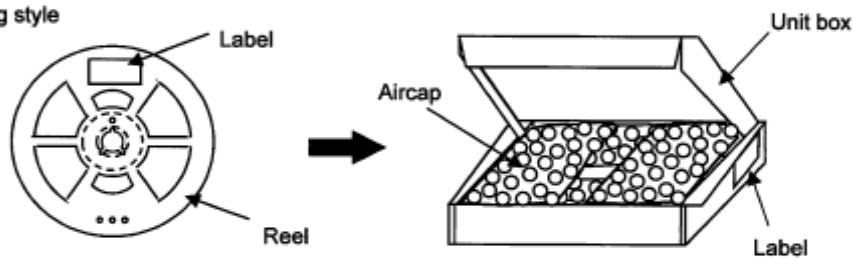
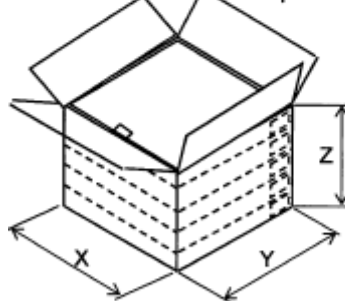


Fig. 6 Packing style

## 2. 6. Shipping style

5 unit boxes or less per shipping box



Package	box dimensions (all dimensions in mm)		
	X	Y	Z
HRP5	372	368	305
HRP7	372	368	305

(all dimensions in mm)

## 2. 7. Packing materials

Item	Material
Embossed carrier tape	PS
Cover tape	PET + PE
Reel	PS
Air cap	Polyethylene
Unit box	Cardboard
Shipping box	Cardboard

\* Please obey the indication of top side in a shipping box.

Fig. 7 Shipping box dimensions and Shipping style

## 2. 8. Others

## 2. 8. 1. Peelback strength

Cover tape peelback strength is 0.2 to 0.7N.

Fig. 8 Test method



## 2. 8. 2. Missing lcs

- (1) No consecutive dropouts.
- (2) A maximum 0.1% of specified number of products in each packing may be missing.

## 3. Storage conditions

### 3. 1. Storage environment

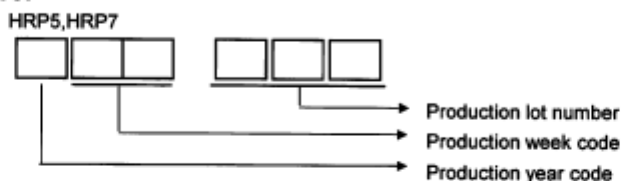
Recommended storage conditions are as follows :

- Temperature : 5 to 30°C
- Humidity : 40 to 70% RH

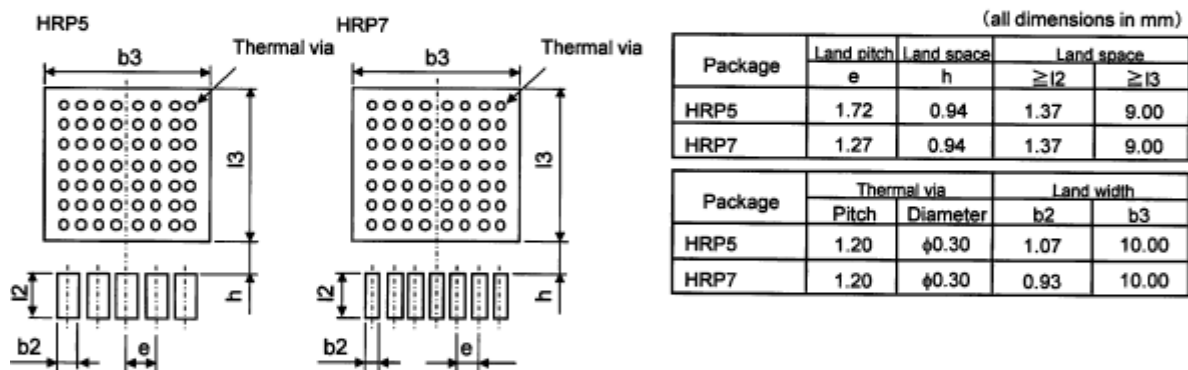
### 3. 2. Storage period

- Specified storage period : 1 year

## 4. Marking lot number

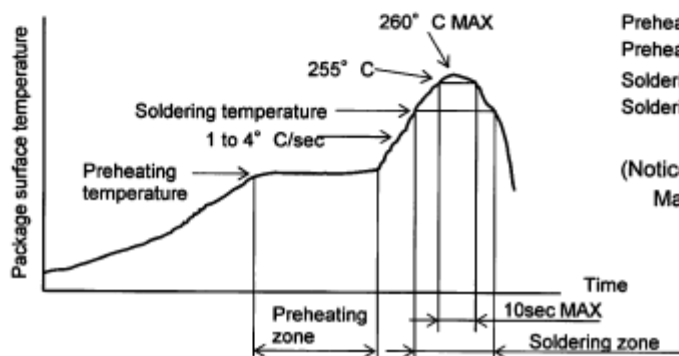


## 5. Footprint dimensions (Optimize footprint dimensions to the board design and soldering condition)



## 6. Soldering conditions

### 6. 1. Recommended temperature profile for reflow



- Preheating temperature : 130° C to 190° C
- Preheating zone : 120sec MAX
- Soldering temperature : 220° C to 230° C
- Soldering zone : 60sec MAX

(Notice)

Maximum 2-times soldering

## 6. 2. Recommended condition for wave soldering

Process	Conditions	
	Temperature	Time
Preheating	120° C to 150° C	60sec MAX
Soldering	260° C $\pm$ 3° C	12sec MAX

(Notice) Soldering time is provided for total soldering time in case of dual wave soldering.

## 6. 2. 1. Notes for wave soldering

- (1) Do not use other soldering methods with wave soldering.
- (2) Recommend to clean the board to eliminate flux, solder waste, and other impurities for reliability, after soldering.
- (3) Optimize soldering condition to prevent solder bridging.

## 6. 3. Recommended condition for solder iron

Recommended condition for solder iron

- Solder iron temperature : 380°C or less
- Mounting time : 4sec or less

## &lt; Tape dimensions &gt;

Package	Quantity (pcs)	Tape dimensions (all dimensions in mm)											
		A1	B1	D0	D1	E	F	K'	P1	P2	T	W	P0
HRP5	2000	10.0	11.3	$\phi$ 1.5	$\phi$ 2.0	1.75	11.5	2.1	12.0	2.0	0.3	24.0	4.0
HRP7	2000	10.0	11.3	$\phi$ 1.5	$\phi$ 2.0	1.75	11.5	2.1	12.0	2.0	0.3	24.0	4.0
Tolerance		$\pm$ 0.1	$\pm$ 0.1	$\begin{smallmatrix} +0.1 \\ -0 \end{smallmatrix}$	MIN	$\pm$ 0.1	$\pm$ 0.1	$\pm$ 0.1	$\pm$ 0.1	$\pm$ 0.1	-	$\pm$ 0.3	$\pm$ 0.1

## &lt; Reel dimensions &gt;

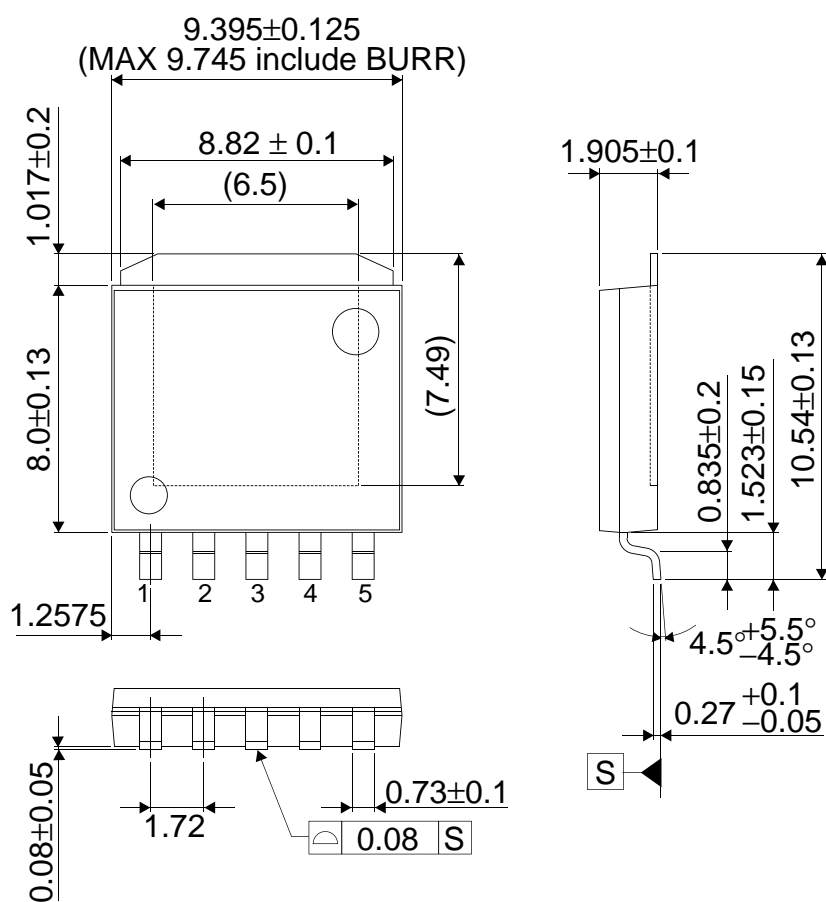
Package	Reel dimensions (all dimensions in mm)						
	A	B	C	D	E	W1	W2
HRP5	$\phi$ 330	$\phi$ 80	$\phi$ 13.0	$\phi$ 21.0	2.0	25.5	29.5
HRP7	$\phi$ 330	$\phi$ 80	$\phi$ 13.0	$\phi$ 21.0	2.0	25.5	29.5
Tolerance		$\pm$ 2.0	$\pm$ 1.0	$\pm$ 0.2	$\pm$ 0.8	$\pm$ 0.5	$\pm$ 1.0

## &lt; Dehydrated weight &gt;

Dehydrated weight dimensions in g
0.41
0.43

# Package Dimensions

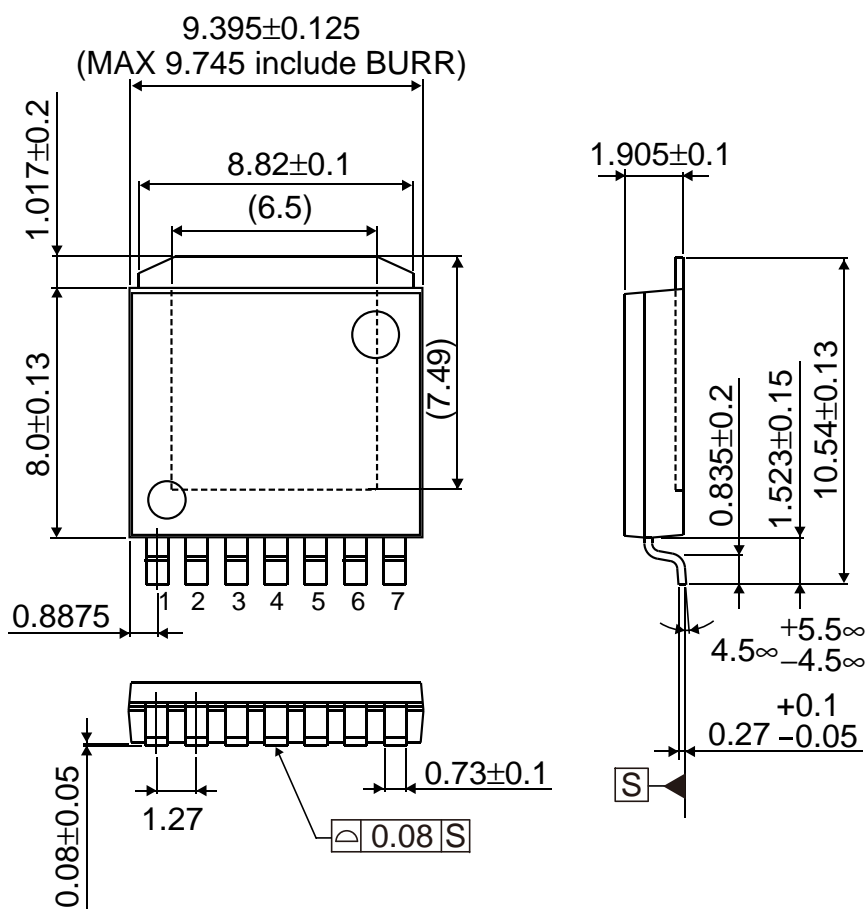
HRP5



(Unit : mm)

# Package

HRP7



(Unit : mm)

## Notes

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